

CLAIMS

1. An HMD device comprising an image-generating unit for generating a polychromatic image and deflection optics comprising first and second partial optics, said deflection optics projecting the image such that it is perceivable by a user wearing said HMD device, wherein the two partial optics each contain a diffractive optical unit for beam deflection, which are designed such that their dispersion errors compensate each other.
2. The HMD device as claimed in Claim 1, wherein use is made of a non-zeroth order of diffraction of the diffractive optical units for beam deflection.
3. The HMD device as claimed in Claim 2, wherein the same order of diffraction is used for both diffractive optical units.
4. The HMD device as claimed in Claim 1, wherein the diffractive optical unit of at least one of the first and second partial optics is provided as a line grating.
5. The HMD device as claimed in Claim 4, wherein the line grating serves the purpose of beam deflection.
6. The HMD device as claimed in Claim 4, wherein the line grating only serves the purpose of beam deflection and also as an imaging optical element.

7. The HMD device as claimed in Claim 6, wherein the grating constant of the line grating varies with respect to the imaging effect.
8. The HMD device as claimed in Claim 4, wherein the line grating is formed on or in a curved material interface.
9. The HMD device as claimed in Claim 8, wherein the material interface is spherically curved.
10. The HMD device as claimed in Claim 9, wherein said deflection optics comprise a refractive element having a first and a second side, said first side being said spherically curved material interface.
11. The HMD device as claimed in Claim 10, wherein said line grating formed on or in said spherically curved material interface is adapted to provide a desired aspherical effect.
12. The HMD device as claimed in Claim 4, wherein the line grating is formed on or in a planar material interface.
13. The HMD device as claimed in Claim 1, wherein the second partial optics arranged in front of the eye of a user wearing the HMD device are provided so as to allow the user to perceive his environment through said optics.

14. The HMD device as claimed in Claim 13, wherein the user can see through the diffractive optical unit of the second partial optics in the zeroth order of diffraction.
15. The HMD device as claimed in Claim 1, wherein the second partial optics have a refractive effect for correction of visual deficiencies of the user wearing the HMD device.